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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,383	12/22/2000	Peter Van Vlasselaer	4750-0001.30	9470

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EXAMINER	
SEHARASEYON, JEGATHEESAN	
ART UNIT	**PAPER NUMBER**
1647	15

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/747,383	VLASSELAER ET AL.	
	Examiner	Art Unit	
	Jegatheesan Seharaseyon	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *14* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1.This office action is in response to the amendment and response filed on 7/17/03 in Paper No: 13. Applicant has cancelled claims 1-14. Claim 15 has been amended. Applicant has added new claims 22 and 23. Thus, claims 15-23 are under consideration.

2. The change of title is acknowledged.

3. Applicants have indicated that new drawings will be submitted at a later date.

4.The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

5. Any objection or rejection of record, which is not expressly repeated in this action, has been overcome by Applicant's response and withdrawn.

6. Applicant's arguments filed 17 July 2003 have been fully considered but they are not deemed to be persuasive.

Claim Rejections - 35 USC § 103, maintained.

7. The rejection of claims 15-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huland et al. (U. S. Patent No. 5,780,012) in view of both Debs et al. (J.of Imm. Vol. 140: 3482-3488) and Ruskewicz et al. (U. S. Patent No. 5,971,951) is maintained.

Applicants' arguments have been considered but are not deemed to be persuasive. Applicants argue that neither Huland, Ruskewicz nor Deb references disclose a gamma interferon composition comprising a stabilizing agent consisting of sugar, alcohol, amino acid or a combination thereof (see page 7, 2nd paragraph of

response). This is not found to be persuasive because Huland et al. reference clearly recites these limitations. Huland et al. teach that the aerosol composition contains salt, buffer or sugar (column 5, lines 45- 47). It also teaches that the composition may contain amino acids (column 5, lines 55- 57) and alcohol such as polyethyleneglycol (column 6, lines 1- 3). Huland et al. also teach the inclusion of cytokines in the aerosol composition including interferon gamma (column 4, lines 45- 55).

Applicants' arguments with respect to serum albumin have been considered. It is noted that the instant claims do not expressly exclude serum albumin. There is no disagreement on the fact pattern of Huland et al. as described by the Applicant on page 7, last paragraph. However, there is no teaching in Huland et al. to indicate that the biological activity of the cytokine in the aerosol composition is substantially different from that of the solution. Absent evidence to the contrary it assumed that the cytokine activity of the aerosol compositions in Huland et al. is substantially the same as that of solution.

Applicant further argues that the cited references in combination do not remedy the deficiency of Huland et al with respect to claim 15 and the other dependent claims. This argument is not found to be persuasive. Ruskewicz et al. teach that the size of the particles be in the range 0.5 to 12 microns, mean particle size be within a narrow range, so that 80% or more of the particles being delivered to the patient (limitation of new claim 22) have a particle diameter that is within ± 20% of the average particle size, preferably within ± 10%, and more preferably within ± 5% of the average particle size (column 17, lines 45-50). Thus, meeting the limitation of droplets having a narrow

distribution of sizes that is less than 2 standard deviations from the volume mean diameter of the droplets (claim 15). It is noted that particles within ± 5% of the average is considered within two standard deviations of the mean (see Appendix A). This also meets the limitation recited in claim 23, wherein at least 95% of the droplets have a size in the selected size range. The limitations to claims 16-21 have been previously discussed in Paper No: 11.

Furthermore, Applicant discusses the particle size of distribution and the size ranges and claim that novel composition and aersolization conditions achieve these goals. However, Ruskewicz et al. clearly discuss the manipulation of particle sizes (column 28, lines 21-40) and Huland et al. discusses the aerosol composition of cytokines including interferon gamma (column 5 and 6). Therefore, contrary to Applicants assertions Huland, Deb and Ruskewicz in combination suggest gamma-interferon aerosol having a narrow particle distribution as recited in the instant claims.

Applicant claims that before the present invention it was not known that gamma-interferon could be formulated so that its activity and molecular-size-characteristics are maintained over an extended storage condition and yet allow the desired protein properties and particle-size features in an aerosol. However, Huland and Ruskewicz in combination clearly teach cytokine (gamma-interferon is a cytokine) formulations that contain the activity and characteristics of the protein in an aerosol. In addition, Applicant discusses limitations not present in the instant claims with respect to monomeric and dimeric forms forms gamma-interferon and its effect on aerosolization.

Finally, Applicant again asserts that the Huland et al. reference does not teach that a gamma-interferon solution can maintain substantial biological activity and molecular size distribution, which are not remedied by Deb and Ruskewicz references. However, as discussed above Huland et al. teach cytokines in aerosol preparations and any deficiency in the limitations are taught Debs et al. and Ruskewicz et al. Therefore, rejection of claims 15-23 under 35 U.S.C. 103(a) as being unpatentable over Huland et al. (U. S. Patent No. 5,780,012) in view of both Debs et al. (J.of Imm. Vol. 140: 3482-3488) and Ruskewicz et al. (U. S. Patent No. 5,971,951) is maintained.

8. New claim rejection necessitated by Applicants amendments.

Claim Rejections - 35 USC § 112

9.The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9a. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although, the specification describes stabilizing agents such as sugar, alcohol and amino acids it does not describes the combination of these agents (see specification page: 7, lines 26-28). Therefore, it appears that the instant invention was not in Applicants possession. This is a new matter rejection.

10. No claims are allowable.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jegatheesan Seharaseyon whose telephone number is 703-305-1112. The examiner can normally be reached on M-F: 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz can be reached on 703-308-4623. The fax phone numbers for

the organization where this application or proceeding is assigned are 703-308-0294 for regular communications and 703-308-4227 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

JS

Lorraine Spector

LORRAINE SPECTOR
PRIMARY EXAMINER